

IN THE CLAIMS

Claims 1-12 (Canceled).

13. (Currently amended): An isolated nucleic acid molecule ~~according to claim 12~~ comprising a nucleic acid sequence encoding a protein having glycosyl hydrolase activity, wherein the glycosyl hydrolase protein having glycosyl hydrolase activity has a hydrophobic cluster analysis (HCA) score with the kappa-carrageenase of *Alteromonas carrageenovora* which is greater than or equal to 75% over the domain extending between amino acids 117 and 262 of the amino acid sequence of *Alteromonas carrageenovora* that is SEQ ID NO: 6.

14. (Previously added): An isolated nucleic acid molecule according to claim 13, wherein the HCA score is greater than or equal to 80%.

15. (Previously added): An isolated nucleic acid molecule according to claim 13, wherein the HCA score is greater than or equal to 85%.

16. (Currently amended): A vector comprising a nucleic acid molecule according to ~~claim 12~~ claim 13.

17. (Currently amended): A host cell genetically modified with a nucleic acid molecule according to ~~claim 12~~ claim 13 or with a vector comprising said nucleic acid molecule.

18. (Previously added): A method of producing a protein having glycosyl hydrolase activity, the method comprising:

- (a) obtaining the host cell of claim 17; and
- (b) growing the host cell under conditions and for a time sufficient to produce the protein.

19. (Currently amended): A method of producing kappa-oligocarrageenans kappa-carrageenans, comprising

- (a) genetically modifying a host cell with a nucleic acid molecule having SEQ ID NO: 5, or with a vector comprising a nucleic acid molecule having SEQ ID NO: 5;
- (b) culturing the host cell until a protein having glycosyl hydrolase activity is produced;
- (c) isolating the protein having glycosyl hydrolase activity;
- (d) contacting the isolated protein having glycosyl hydrolase activity with a carrageenan until ~~kappa-oligocarrageenans~~ kappa-carrageenans are produced; and
- (e) recovering the ~~kappa-oligocarrageenans~~ kappa-carrageenans.

Claim 20 (Canceled).